ASSIGNMENT 8

Textbook Assignment: "Input/Output (I/O) and Interfacing," chapter 7—continued, pages 7-20 through 7-38.

8-1. The read/write control logic accepts control signals from which of the following devices?

1. The data bus
2. The control bus
3. The master clock
4. The USART

8-2. To program the USART for the applicable interface when it is in an idle state, which of the following signals/words is required?

1. A reset signal
2. A clock signal
3. A new set of data words
4. A new set of control words

8-3. The universal synchronous-asynchronous receiver transmitter is enabled for reading/writing operations when which of the following signals is true?

1. The WRITE DATA
2. The CHIP SELECT
3. The CONTROL DATA
4. The DATA SET READY

8-4. When the WRITE DATA (WD) signal is true, it means which of the following things?

1. It indicates the microprocessor is placing data on the data bus
2. It indicates the microprocessor is ready to receive data or control words
3. It identifies the write operation as a data or control word
4. It enables the universal synchronous/asynchronous receiver transmitter for writing operations

8-5. When the READ DATA (RD) signal is true, the microprocessor is ready for which of the following activities?

1. To receive data only
2. To receive status words only
3. To receive data and status words
4. To receive clock signals

8-6. The transmit control logic converts the data bytes stored in the transmit buffer into which of the following forms?

1. An asynchronous bit stream
2. Start bits
3. Stop bits
4. Parity bits

8-7. A start bit is used for which of the following purposes?

1. To initiate data transfer
2. To alert the output device
3. To control transmit logic
4. To program protocol

8-8. A parity bit is used for which of the following purposes?

1. To regulate signal flow
2. To specify data type
3. To detect errors
4. Each of the above

8-9. The receive buffer stores which of the following information?

1. The output bit stream
2. The protocol signals
3. Serial bytes
4. Parallel bytes

8-10. The voltage and current characteristics of line drivers/receivers are dictated by which of the following factors?

1. The format
2. The interface
3. Channel/port configurations
4. Type of circuitry (TTL or MOS)

8-11. Type A (NTDS) Slow interface format is able to transmit which of the following number of bit groupings?

1. 16 only
2. 30 only
3. 32 only
4. 16, 30, or 32, depending on the type of computer

8-12. The data transmission rate for Type A (NTDS) Slow format is limited by which of the following factors?

1. The requirement to convert data from serial to parallel
2. The type of equipment used
3. The large voltage change between logic states
4. The long distance the transmission must cover

8-13. In Type D (NTDS SERIAL) interface format, information frames are made up of what total number of bits?

1. 32 bits
2. 16 bits
3. 3 bits
4. 8 bits

8-14. Type D (NTDS SERIAL) interface format can transmit digital signals up to which of the following lengths?

1. 300 feet
2. 1000 feet
3. 1500 feet
4. The total length of the cable used regardless of its length

8-15. Type E (NATO SERIAL) format requires which of the following I/O cables?

1. Coaxial
2. Triaxial
3. Dual coaxial
4. Twisted pairs

8-16. Type E (NATO SERIAL) format is most frequently used with which of the following equipment?

1. Mainframe computers
2. Minicomputers
3. Microcomputers

8-17. Type F (aircraft internal time division multiplex [TDM] bus) interface format transmits bit groupings consisting of what total number of bits?

1. 16
2. 20
3. 30
4. 32

8-18. Type F (aircraft internal time division multiplex [TDM] bus) interface format can handle which of the following numbers of external devices on one channel?

1. 16
2. 30
3. 32 (including a bus controller)
4. 34 (including a bus controller)

8-19. Type G (RS-449) interface format primarily uses which of the following protocols?

1. Request acknowledge
2. Command and response
3. SIS/SOS
4. Interrupt/request

8-20. The Small Computer System Interface (ANSI X3.131) using one controller can daisy chain up to what maximum number of units?

1. 8
2. 16
3. 30
4. 32

8-21. The RS-232 interface can be used for which of the following types of transfers?

1. Asynchronous parallel only
2. Synchronous parallel only
3. Asynchronous and synchronous parallel
4. Asynchronous and synchronous serial

8-22. The RS-232 interface can be used with which of the following types of computers?

1. Micros only
2. Mainframes only
3. Minis and mainframes only
4. Micros, minis, and mainframes

8-23. The RS-232 interface limits cable transfers to what maximum number of feet?

1. 50
2. 100
3. 300
4. 1000

8-24. In the RS-232 interface, most peripherals control configuration parameters using which of the following methods?

1. A controller card
2. Dip switches
3. Software
4. VACALES

8-25. The higher transmission rate of the RS-422 interface is made possible by which of the following techniques?

1. Two separate wires are used
2. The receiver transition period is narrower
3. The grounding requirements are less critical
4. All of the above

8-26. In a token ring network, a station with a message waits until it receives a free token, it then changes the free token to a busy token, and transmits a block of data following the busy token. What term is used for the block of data?

1. Record
2. Server
3. Frame
4. File

8-27. The Ethernet interface is used to transfer which of the following types of data in what format?

1. Serial I/O data in packet format
2. Serial data in string format
3. Parallel I/O data in packet format
4. Parallel I/O data in string format

8-28. The type of cable used for the Ethernet interface is which of the following?

1. Twisted pairs
2. Unshielded coaxial
3. Shielded coaxial
4. Triaxial

8-29. Thin Ethernet interface used in smaller systems can have a maximum cable length of which of the following?

1. 500 feet
2. 600 feet
3. 1000 feet
4. 1500 feet

8-30. The Centronics Compatible Parallel interface uses which of the following types of protocol?

1. Command/acknowledge
2. Interrupt driven
3. Asynchronous
4. Synchronous

8-31. Most floppy disk drives today are controlled by which of the following interfaces?

1. Enhanced small device interface
2. ST-506/412 interface
3. Integrated drive electronics interface
4. RS-422 interface

8-32. When using the ST-506/412 interface, the controller card performs which of the following functions for disk drives?

1. Moves the magnetic head
2. Spins the magnetic disk
3. Strips off formatting and control words
4. All of the above

8-33. When using the ST-506/412 to interface a hard disk drive, the cabling required is which of the following?

1. A 34-pin control cable
2. A 20-pin data cable
3. Both 1 and 2 above
4. A shielded coaxial cable

8-34. When using the ST-506/412 to interface a floppy disk drive, the cabling required is which of the following?

1. A 34-pin control cable
2. A 20-pin data cable
3. Both 1 and 2 above
4. A shielded coaxial cable

8-35. The enhanced small device interface can transfer data at up to which of the following rates?

1. 5 megabits per second
2. 24 megabits per second
3. 125 megabits per second
4. 1.2 gigabytes per second

8-36. When using the enhanced small device interface with a floppy disk drive, the cabling required is which of the following?

1. A 34-pin control cable
2. A 20-pin data cable
3. Both 1 and 2 above
4. A shielded coaxial cable

8-37. All electronics used for the integrated drive electronics interface are located in which of the following areas?

1. The computer motherboard
2. The controller card
3. The integrated CPU
4. The ard drive

8-38. The integrated drive electronics interface can handle disk drives with a maximum capacity of which of the following?

1. 1 MB
2. 80 MB
3. 180 MB
4. 300 MB

8-39. The minimum number of conductors required for I/O serial data operations is which of the following?

1. 1
2. 2
3. 37
4. 4

8-40. During asynchronous data exchange, a frame of data must include which of the following bits at a minimum?

1. One start bit
2. One stop bit
3. Seven character bits
4. All of the above

8-41. During asynchronous data exchange, the maximum number of bits for one frame of data is which of the following?

1. 8
2. 9
3. 10
4. 11

8-42. Compared to asynchronous data exchange, synchronous data exchange has which of the following advantages?

1. Faster speed
2. More reliability
3. Less electronics required
4. Fewer bits required for each character

8-43. The generally accepted standard connector for implementing an RS-232 connection has what total number of pins?

1. 12
2. 25
3. 26
4. 32

8-44. The protective ground, pin 1 of the RS-232 interface connector in the DTE/DCE mode should always be connected to the shielded cable shield at both ends.

1. True
2. False

8-45. Pin 7 of the RS-232 interface connector in the DTE/DCE mode should always be connected at both ends for which of the following reasons?

1. To complete the path for control signals only
2. To provide a complete path for the data signals only
3. To provide timing signals to the peripheral device only
4. To provide a common reference for all signals

8-46. Pin 3 of the RS-232 interface connector in the DTE/DCE mode is used for which of the following purposes?

1. To send data signals
2. To send control signals
3. To receive data signals
4. To receive control signals

8-47. Pins 4, 5, 6, and 20 are used in the DTE/DCE mode using the RS-232 interface connector for which of the following purposes?

1. To send and receive data signals
2. To send and receive control signals
3. To send and receive timing signals
4. To establish the communications link

8-48. In parallel data operations, the IOA or line driver/receiver provides the means to accomplish which of the following tasks?

1. Convert the byte or word to a sequential bit stream
2. Drive or detect the digital signals
3. Convert serial data to parallel data
4. Provide constant timing signals at the specified voltage levels

8-49. In parallel data operations, one I/O channel could consist of which of the following devices?

1. Two cables, one for input and one for output or a single cable to handle both input and output
2. Eight or more data lines
3. A number of control lines
4. All of the above

8-50. The data strobe in single parallel cable operations is used for which of the following purposes?

1. Checks for data on the data lines
2. Ensures that the data on the data lines is stable
3. Signals the external device that data is ready to be read from the data lines
4. All of the above

8-51. In single parallel cable operations, a busy signal would be sent under which of the following conditions?

1. The computer output buffer is full
2. The external equipment is not energized
3. The external equipment input buffer is full
4. The computer is involved in internal operations

8-52. In two cable parallel operations, an external interrupt enable can be described as which of the following?

1. A signal sent from the external device on the input line
2. A signal sent from the computer on the output line
3. A signal sent from the external device on the output line
4. A signal sent from the computer on the input line

8-53. When an external interrupt code is placed on the data lines, it is accompanied by which of the following signals?

1. An external interrupt request
2. An input data acknowledge
3. An input data request
4. All of the above

8-54. When the computer samples an interrupt code, which of the following signals will occur?

1. An external interrupt acknowledge
2. An external interrupt enable
3. An input data acknowledge
4. All of the above

8-55. In a two cable sequence of events for input data, the first event will be which of the following?

1. The external equipment sets the IDR line
2. The external equipment places a word of data on the ID lines
3. The computer sets the input data request line
4. The computer clears the IDA line

8-56. In the two cable sequence of events for input data, the computer has sampled the data on the ID lines. Which of the following events must occur before the computer will accept more data?

1. The IDR must be cleared
2. A new data word must be placed on the I/O lines
3. The IDR must be reset
4. All of the above

8-57. During a normal external function sequence of events, the computer places an EF code word on the OD lines. The next event to take place is which of the following?

1. The EFR line is set
2. The ODA line is set
3. The EFR line is cleared
4. The EFA line is set

8-58. During forced external functions, the computer does not require which of the following signals?

1. An EFR
2. An EFA
3. An ODR
4. An ODA

8-59. During the external interrupt sequence of events, what is the first event that must occur before a computer will accept an external interrupt?

1. The EI code word is placed on the ID lines
2. The EIE line is set
3. The EIR line is set
4. The IDA line is set

8-60. During the external interrupt sequence of events, the computer samples the EI code word on the ID lines and clears the EIE line for data to continue to transfer. Which of the following events, must occur?

1. The computer sets the IDA line only
2. The external equipment detects the setting of IDA line only
3. The computer clears the IDA line only
4. The computer sets the IDA line, the external equipment detects the setting of the IDA line, and the computer clears the IDA line

8-61. All computers used by the Navy will have EIE lines.

1. True
2. False

8-62. In intercomputer I/O operations when parallel channels are used, the input and output cables will have which of the following characteristics?

1. The input and output cables can be uneven in number
2. An ODA signal becomes a resume signal
3. An ODR signal becomes a ready signal
4. The input and output cables will be identical

8-63. During intercomputer I/O operations, command words include which of the following data?

1. External functions only
2. Forced external finctions only
3. External function buffer words only
4. External functions, forced external functions, and external function buffer words

8-64. During intercomputer I/O operations, command word functions are identified by use of which of the following techniques?

1. Flag words
2. Setting ODA lines
3. Additional interface signals
4. All of the above

8-65. During intercomputer I/O operations, in order for a buffered command word transfer to be possible, the transmitting computer must have (a) what line and the receiving computer must have (b) what line?

1. (a) EFR (b) EIE
2. (a) EFR (b) EFR
3. (a) EIE (b) EIE
4. (a) EIE (b) ERF

8-66. For an intercomputer command word buffered transfer, the receiving computer is ready to accept an external function command word. This is signaled by which of the following means?

1. The external function request line is set
2. The external interrupt enable line is set
3. The external fiction acknowledge is set
4. The input data request line is set

8-67. During an intercomputer command word buffered transfer, before putting the EF code on the data lines, the transmitting computer recognizes which of the following signals?

1. An EFR
2. An EFA
3. An ODA
4. All of the above

8-68. In intercomputer command word transfers when the transmitting computer does not have an EFR line, the command word will be transferred in what way, if any?

1. As a data word
2. As a buffered command word
3. As a forced command word
4. None, data cannot be transferred without an EFR line

8-69. In intercomputer I/O operations, all command words specified by the receiving computer's EF buffer control words will be transferred one command word at a time.

1. True
2. False

8-70. Before the intercomputer data transfer sequence of events can begin, which of the following events must have occurred on the same channel?

1. An OD buffer must have been established on the transmitting computer
2. An ID buffer must have been established on the receiving computer
3. Both 1 and 2 above
4. An IDA must have been established

8-71. In intercomputer data transfers, the data word is held on the OD lines until the receiving computer performs which of the following tasks?

1. Sets the IDR line
2. Clears the IDR line
3. Sets the resume line
4. Clears the resume line

8-72. In intercomputer data transfer, the receiving computer recognizes the ready line of the transmitting computer as what line?

1. The IDR line
2. The ODR line
3. The ODA line
4. The resume line

8-73. In intercomputer data transfer, the transmitting computer recognizes the IDA line of the receiving computer as what line?

1. The IDR line
2. The ODR line
3. The ODA line
4. The resume line

8-74. In intercomputer data transfer, after one data word has been transferred and before the next data word is placed on the data OD lines, which of the following events occurs?

1. The receiving computer sets the IDA line
2. The transmitting computer clears the ready line
3. Both 1 and 2 above
4. The receiving computer clears the EFR line